

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the above-referenced application.

Listing of Claims:

What is claimed is:

1. (Original) A process for preparing a particulate solid material comprising the steps of:

(a) obtaining a paper-fibre waste solid material having a ratio of china clay, or equivalent, to chalk, or equivalent, greater than a pre-determined minimum;

(b) treating the material to reduce the moisture content and form a granular material; and

(c) calcining the granular material at a temperature of approximately 1300°C or higher to provide a particulate, 100% solids, material.

2. (Original) A process as claimed in claim 1 wherein the paper-fibre waste solid material is non-hazardous waste material arising from the recycling of waste paper and tissue.

3. (Original) A process as claimed in claim 2 wherein the paper-fibre waste solid material is in the form of sludge.

4. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the paper-fibre waste solid material has a moisture content of over 45%.

5. (Original) A process as claimed in claim 4 wherein the paper-fibre waste solid material has a moisture content of over 55%, optionally 60%.

6. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein minor components in the paper-fibre waste solid material including non-fibrous contraries materials are removed prior to step (b).
7. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the paper--fibre waste solid material is waste paper from a paper making process.
8. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the china clay or equivalent includes any form of hydrated aluminium silicate, including kandites, kaolins and the like.
9. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the chalk or equivalent includes any form of calcium carbonate, which includes the forms of limestone.
10. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the process further includes the step of: dewatering the paper-fibre waste solid material prior to step (b).
11. (Original) A process as claimed in claim 10 wherein the dewatering process provides a sludge material having a solids content generally in the range 22-55%.
12. (Currently Amended) A process as claimed in claim 1 ~~claim 10 or claim 11~~ wherein analysis of the china clay: chalk ratio is carried out prior to the dewatering of the waste material.
13. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the determination of the ratio of the china clay: chalk is carried out using the 'acid extraction' method.

14. (Original) A process as claimed in claim 13 wherein the pre-determined minimum ratio using the 'acid extraction' method is approximately 0.2.

15. (Currently Amended) A process as claimed in claim 1 ~~any one of claims 1 to 12~~ wherein the determination of the ratio of the china clay: chalk is carried out using the 'ash/acid extraction' method.

16. (Original) A process as claimed in claim 15 wherein the pre-determined minimum ratio using the 'ash/acid-extraction' method is approximately 0.13.

17. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein a conditioning material is added to the paper-fibre waste solid material in step (a).

18. (Original) A process as claimed in claim 17 wherein the conditioning agent raises the china clay: chalk ratio above the pre-determined minimum.

19. (Currently Amended) A process as claimed in claim 1 ~~claim 17 or claim 18~~ wherein the conditioning material is partly, substantially or wholly china clay, or at a china clay suspension, or another silicate material.

20. (Currently Amended) A process as claimed in claim 1 ~~any one of claims 17 to 19~~ wherein a dispersing agent is added with the conditioning agent.

21. (Currently Amended) A process as claimed in claim 1 ~~any one of claims 17 to 20~~ wherein the material has a solids content of less than 45%, optionally 22% or lower.

22. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the ratio of silica and aluminium to natural fillers in the paper-fibre waste solid material is also determined.

23. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the treatment step (b) includes compression and/or extrusion of the material.

24. (Original) A process as claimed in Claim 23 wherein step (b) is carried out by a granulating press.

25. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the treatment step (b) is provided by direct heat contact.

26. (Original) A process as claimed in claim 25 wherein a heat transfer material is used.

27. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the treatment step (b) is carried out with agitation.

28. (Original) A process as claimed in claim 27 wherein the agitation is provided by a rotary apparatus.

29. (Original) A process as claimed in claim 28 wherein the rotary apparatus is inclined.

30. (Currently Amended) A process as claimed in claim 1 ~~claim 28 or claim 29~~ wherein the rotary apparatus allows for a wholly or substantially continuous feed of material.

31. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the treatment step (b) is carried out at a raised temperature, optionally between 60-80°C.

32. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein step (b) is carried out under an inert atmosphere.
33. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the granular material provided by step (b) comprises granules in the range 3mm-30mm in size.
34. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the granular material formed by step (b) is reduced in size, optionally by grinding or milling.
35. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the granular material formed by the treatment step (b) has a solids content in the range of approximately 45-90% solids.
36. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the calcining of the granular material reduces the moisture in the material wholly or substantially to zero.
37. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein particulate material being formed by step (c) is partly or substantially porous.
38. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the granular material is calcined with agitation.
39. (Original) A process as claimed in claim 38 wherein the agitation is provided by a rotary apparatus.

40. (Original) A process as claimed in claim 39 wherein the rotary apparatus is a high temperature rotary furnace tube.

41. (Currently Amended) A process as claimed in claim 1 ~~any one of the preceding claims~~ wherein the calcining temperature is greater than 1300°C, optionally approximately 1320°C, or optionally higher.

42. (Currently Amended) A particulate solid material whenever prepared by a process as defined in claim 1 ~~any one of claims 1 to 41~~.

43. (Original) A particulate solid material formed from a paper-fibre waste solid material having a bulk density of less than 1,000kg/m³, preferably in the range 560kg/m³ to 800kg/m³, and in the form of an aggregate having a mean particle size in the range 3 to 15mm.

44. (Currently Amended) A particulate solid material as claimed in claim 1 ~~claim 42 or claim 42~~ being a light-weight aggregate for making cementitious, concrete or other building blocks.

45. (Currently Amended) A particulate solid material as claimed in claim 1 ~~claim 42 or claim 43~~ having a particle size of less than 100µm, and being a cementitious material.